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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,937	11/06/2000	Thomas Huber	N0070US	8577

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NAVIGATION TECHNOLOGIES  
222 MERCHANDISE MART  
SUITE 900, PATENT DEPT.  
CHICAGO, IL 60654

EXAMINER
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LE, MIRANDA

ART UNIT	PAPER NUMBER
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2167

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/706,937

Applicant(s)

HUBER ET AL.

Examiner

Miranda Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This communication is responsive to Amendment filed 04/14/2005.
2. Claims 1-6, 8-14 are pending in this application. Claims 1, 2, 14 are independent claims. In the Amendment, claims 1, 14 have been amended; no claims have been added, or cancelled. This action is made Final.

### Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2, 3, 5, 6, 9, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Hancock (US Patent No. 6,609,062 B2).

Hancock anticipated independent claim 2 by the following:

**As per claim 2**, Hancock teaches an index (i.e. cell code, district code, or map code, col. 19, lines 27-29, country code, state code, and city code, col. 12, lines 9-56) for data that represent geographic features comprising:

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a structure that includes two spatial dimensions and a non-spatial dimension (i.e. latitude, longitude coordinate, universal location address or ULA, col. 20, lines 1-21, col. 5, lines 35-67),

whereby said data indexed by said structure are searchable spatially using said two spatial dimension (i.e. Fig. 25 shown the local city grid is determined by using geographic location, col. 36, lines 4-32),

whereby a non-spatial property (i.e. the name of the local city, col. 36, line 42, Fig. 12a) of the indexed (i.e. city code, col. 12, lines 41-45) data that represent the geographic features is searchable using said third dimension (col. 8, line 21 to col. 9, line 7, col. 20, lines 1-21, Fig. 12a. It should be noted that the latitude, longitude (i.e. first and second dimensions) or ULA (i.e. third dimension) could be searchable as “The capture of position information for a certain name will now be described. Referring to FIG. 4, as indicated by identifying numeral 55, positional information could be entered manually, by, for example, inputting the ULA or coordinates of the location from a known mapping system”, col. 8, lines 51-55).

**As per claim 3**, Hancock teaches said structure is a k-d- tree index structure comprising a root node, intermediate node and leaf nodes, wherein each node is part of a parent-child relationship wherein each parent node includes control information from which one of at least two child nodes associated with the parent node are distinguishable based on search key (col. 6, lines 15 to col. 7, line 25).

**As per claim 5**, Hancock teaches said improved index is non-homogeneous (col. 6, lines 15 to col. 7, line 25).

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**As per claim 6**, Hancock teaches said geographic features are roads (col. 8, lines 20-50).

**As per claim 9**, Hancock teaches said non-spatial property is a granularity of the indexed data (col. 6, lines 15 to col. 7, line 25).

**As per claim 10**, Hancock teaches said non-spatial property is a viewing altitude associated with the indexed data (col. 20, lines 1-21).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock (US Patent No. 6,609,062 B2), in view of Beesley et al. (US Patent No. 6,252,605 B1).

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As per claim 1, Hancock teaches an index (i.e. cell code, district code, or map code col. 19, lines 27-29, country code, state code, and city code, col. 12, lines 9-56) for data that represent geographic features (See abstract) comprising:

a structure that includes three dimensions (i.e. latitude, longitude coordinate, and universal location address, or ULA, col. 20, lines 1-21, col. 5, lines 35-67),

wherein a first dimension of said three dimension includes latitude boundary information, a second dimension of said three dimension includes longitude boundary information (i.e. The districts may also be quasi-rectangular, following latitude and longitude lines, col. 4, lines 66-67), said first dimension and second dimension are search spatially (col. 20, lines 1-21),

wherein a third dimension (i.e. ULA as U.S.GA.ALB.13.78.27.14, col. 14, lines 43-53) includes rank information (i.e. US, GA are hierarchical codes for identifying countries, states, col. 12, lines 6-21) said third dimension is searchable for a rank of the geographic feature represented by the data (i.e. Hierarchical Identifier for Country, State/Province, City, col. 12, lines 5-56).

Hancock teaches said rank indicating a plurality of level (i.e. top level, second level, third level and fourth level, col. 13, lines 6-56).

But Hancock does not explicitly teach the level in detail, Beesley teach this limitation at col. 4, line 19 (i.e. feature at each layer).

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Beesley's teachings would have allowed Hancock's to easily configure for a variety of parameters, and improve the grouping, or clustering of data representing different cartographic areas.

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**As per claim 14**, Hancock teaches an index (i.e. cell code, district code, or map code col. 19, lines 27-29, country code, state code, and city code, col. 12, lines 9-56) for data comprising:

a structure that includes a first dimension, a second dimension and a third dimension (i.e. latitude, longitude coordinate, and universal location address, col. 20, lines 1-21, col. 5, lines 35-67),

wherein said first dimension includes latitude boundary information (i.e. The districts may also be quasi-rectangular, following latitude and longitude lines, col. 4, lines 66-67),

wherein said second dimension includes longitude boundary information (i.e. The districts may also be quasi-rectangular, following latitude and longitude lines, col. 4, lines 66-67),

whereby said data indexed by said structure are searchable using said first and second dimensions (i.e. Fig. 25 shown the local city is determined by using geographic location, col. 36, lines 4-32),

wherein said third dimension (i.e. ULA as CITY2-11-17-18-HS2200, col.7, lines 9-25) includes granularity information (i.e. HS2200 represents a height of 2200 feet above the sea level, at col.7, lines 9-25) of the indexed data (col. 7, lines 10-67),

whereby a granularity of the indexed data is searchable using said third dimension (i.e. Fig. 25 shown the codes are determined by using geographic location, col. 36, lines 4-32).

Hancock teaches said rank indicating a plurality of level (i.e. top level, second level, third level and fourth level at col. 13, lines 6-56).

Hancock does not explicitly teach a level in detail. However, Beesley teach this limitation at col. 4, line 19 (i.e. feature at each layer).

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It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Beesley's teachings would have allowed Hancock's to easily configure for a variety of parameters, and improve the grouping, or clustering of data representing different cartographic areas.

**As per claim 8**, Hancock teaches said rank includes both integers and fractional values (col. 6, lines 15 to col. 7, line 25).

7. Claims 4, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock (US Patent No. 6,609,062 B2), in view of Evans et al. (US Patent No. 6,327,535 B1).

**As per claim 4**, Hancock does not explicitly teach "improved index is homogeneous". However, Evans teaches this limitation at col. 12, lines 23-45, col. 4, lines 31-41.

Thus, it would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Evans's teachings would have allowed Hancock's to efficiently enable proximity calculations to be computed in a fast and straightforward manner.

**As per claim 11**, Smartt does not explicitly teach "property is a scale associated with the indexed data". However, Evans teaches this limitation at col. 6, line 66 to col.7, line 13, col. 24, lines 20-40.



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It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Evans's teachings would have allowed Hancock's to more easily and accurately obtain a uniform way of defining locations.

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hancock et al. (US Patent No. 6,470,287 B1), in view of Smartt et al. (US Patent No 6,470,287 B1).

**As per claim 12**, Hancock teaches "property is an expiration date associated with the indexed data" at col. 6, lines 55-65.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Smartt's teachings would have allowed Hancock's to enable efficient search both for records that contain specific value in the indexed field, and for records that have a range of values in the indexed field.

**As per claim 13**, Hancock teaches "property is a creation date associated with the indexed data" at col. 6, lines 55-65.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Smartt's teachings would have allowed Hancock's to enable efficient search both for records that contain specific value in the indexed field and for records that have a range of values in the indexed field.

### ***Response to Arguments***

9. Applicant's arguments filed 04/14/2005 have been fully considered but they are not persuasive.

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Applicant argues that:

(a) Hancock's reference does not teach/suggest feature of "an index for data that represents geographic features".

(b) Hancock's reference does not teach/suggest feature of "the third dimension of the index that includes rank information and that is searchable for a rank of the geographic features".

(c) Hancock's reference does not teach/suggest feature of "a non-spatial property of the indexes data is searchable using third dimension".

(d) Hancock's reference does not teach/suggest feature of "the third dimension includes granularity information of the indexed data, and a granularity of the indexed data is searchable using the third dimension."

The examiner respectfully disagrees for the following reasons:

Per (a), Hancock teaches an index for data that represent geographic data as recited in col. 19, lines 27-29, col. 12, lines 9-65, and in table 1 at cols. 7-8 (cell code, district code, map code, country code, state code, city code, alpha code). These codes represent the geographic features as "HEIGHT ABOVE THE SEA" at col. 7, line 54.

Per (b), Hancock teaches the third dimension (i.e. universal location address or ULA as U.S.GA.ALB.13.78.27.14, at col.14, lines 43-53) includes rank information (i.e. US, GA are hierarchical codes for identifying countries, states at col.12, lines 6-21).

Furthermore, Hancock teaches the third dimension (i.e. universal location address) is searchable for a rank (i.e. hierarchical arrangement of codes) of the geographic feature represented by the data in Fig. 5.

Per (c), Hancock teaches a non-spatial property of the index (i.e. country name, state name, city name, col. 36, lines 40-45, and Fig. 12a).

As clearly seen in Fig. 12a, the non-spatial property (i.e. United States, Texas, Austin) is searchable using the third dimension (i.e. universal location address, US TX AUS 55.63.17.62).

Per (d), Hancock teaches the third dimension (i.e. ULA as CITY2-11-17-18-HS2200, at col. 7, lines 9-25) including granularity information as HS2200, which represents a height of 2200 feet above the sea level (col. 7, lines 9-25). It is noted that this information could be searchable as "The capture of position information for a certain name will now be described. Referring to FIG. 4, as indicated by identifying numeral 55, positional information could be entered manually, by, for example, inputting the ULA or coordinates of the location from a known mapping system" (col. 8, lines 51-55).

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
June 23, 2005



CYNTHIA ROBINSON  
PRIMARY EXAMINER